

BEST PRACTICES FOR INSTALLING DUCTLESS HEATING & COOLING SYSTEMS

AN INSTALLER'S GUIDE

Quality service and installations generate referrals, increase sales and improve customer satisfaction.

Properly installed ductless systems heat and cool homes for a fraction of the cost of baseboard and wall heaters, ceiling cable heat and electric furnaces. Following installation best practices and providing homeowner education will ensure satisfied customers.

BEFORE YOU BEGIN

- Review the existing heating and cooling system location and layout with your customers. Consider occupancy, usage and climate when integrating the ductless system as the primary heating and cooling system in the home.
- If there is an electric furnace, determine if it is the best backup heat source or if other backup options are more appropriate.
- Review utility rebates and tax credits. Consult GoingDuctless.com for up-to-date information.

Installation Best Practices

This guide does not replace manufacturer's specifications. Follow manufacturer's installation instructions and building code requirements.

OUTDOOR UNIT (COMPRESSOR)

- Set the unit on a stable, level surface
- Use adjustable risers to prevent debris and snow buildup and allow better drainage
- Secure outdoor units to the pad, risers and/or resting surface using bolts and/or adhesive



REFRIGERANT TUBING

- Create new flares using appropriate R410A flaring tool and measurement gauge; DO NOT USE manufacturer-provided tubing flares and fittings
- Apply refrigerant oil to the end of each flare
- Connect tubing with R410A nuts (supplied with your outdoor unit) and tighten to manufacturer's specifications

REFRIGERANT CHARGE

- Adjust refrigerant charge ONLY IF NECESSARY; most installations do not require adjustment
- Gauges are not needed to verify refrigerant levels; if adjustments are necessary, use a scale when adding/removing refrigerant
- Consult the manufacturer's installation manual to verify refrigerant protocols

LINE SET INSULATION AND PROTECTION

- Insulation must cover entire line set length to avoid condensation and decreased efficiency
- Protect the outdoor line set from insulation damage with rigid line hide and building code-approved line set protection
- An insulative sealant must seal penetrations through the shell of the home; return any insulation disturbed by installed line set to original (or better) condition



CONDENSATE DRAIN

- Must slope downhill; can be routed with line set and run to a suitable termination point, away from crawl spaces and walkways

COLD CLIMATE RECOMMENDATIONS

- Avoid installing outdoor unit along pathways; freezing discharge can pose a slip hazard
- Use a pan heater to prevent defrost discharge from freezing inside the compressor
- Use wall-mount brackets to maximize clearance under the outdoor unit for easy drainage and reduced snow and ice buildup

REQUIRED TOOLS



Ratchet
Flaring Tool



Programmable
Refrigerant
Charging Scale

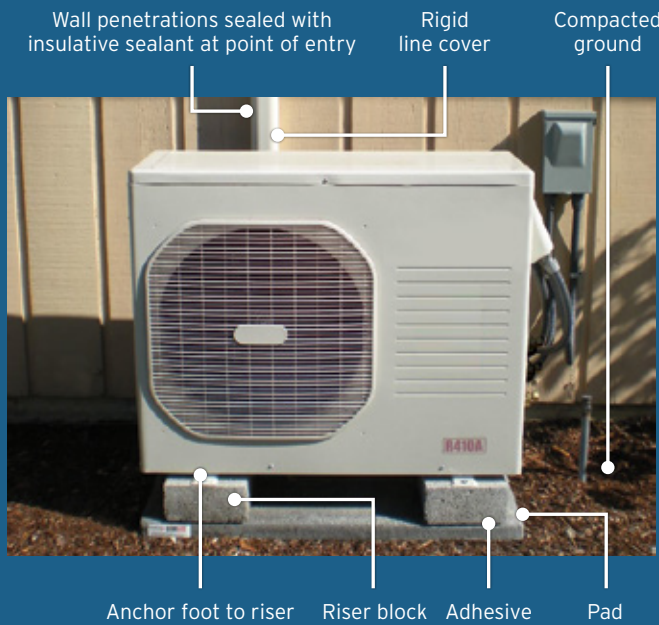


Torque
Wrench



R410A Gauge
and Hose Set

Properly Installed Indoor and Outdoor Units Keep Your Customers Comfortable and Reduce Callbacks



Installation Tips for Maximum Efficiency

- For homes with electric furnaces, consider shutting off the furnace at the breaker or set back the furnace thermostat to prevent competition with the ductless system.
- For homes with zonal electric heat, consider shutting off the heaters at the breaker or set back the zonal heater thermostats to prevent competition with the ductless system.



Finish with Customer Education

Reduce callbacks, generate referrals and ensure customer satisfaction by educating homeowners about the proper use of their ductless systems.

- Ensure homeowner has a copy of the manufacturer's operation manual; refer to the manual during your unit operation walk-through or training
- Provide your customer with a copy of the NW Ductless Heat Pump Project's Homeowner's Guide and remind them that GoingDuctless.com has more information
- If you install a system in a home with electric resistance heating, discuss ways the homeowner can ensure the new ductless system acts as the primary heating and cooling system, providing optimal comfort and savings

For complete information regarding ductless system features, benefits, operation, maintenance and installation requirements, review the manufacturer's installation manual and attend a manufacturer's training. Images of specific manufacturer product lines are not endorsements and this guide does not guarantee their quality. NW Ductless Heat Pump Project is an initiative of the Northwest Energy Efficiency Alliance. 06/2014